

# AN EVALUATION OF SUPPLY CHAIN MANAGEMENT FOR THE FISH FARM INDUSTRY AT BEH TAI FISHERY TRADING

<sup>1</sup> Ooi Soo Hean and <sup>2</sup>Shahimi bin Mohtar

<sup>1</sup>School of Technology Management & Logistic,  
Universiti Utara Malaysia, 06010, Sintok, Kedah, Malaysia

<sup>2</sup>School of Technology Management & Logistic,  
Universiti Utara Malaysia, 06010, Sintok, Kedah, Malaysia  
Email: <sup>1</sup> davidooi89@hotmail.com, <sup>2</sup>shahimi@uum.edu.my

## ABSTRACT

*The fish farm industry consist of a scenario in selling fish to the consumer where by the middleman buys the fish from fish farmers at a much lower price and sell it to the consumers at higher price causing the fish farmers to earn less. The aim of this paper is to understand the flow of supply chain management in fish farm industry. Next, is to identify the key factors of supply chain management in fish farm. The qualitative methods used in this paper are interviews and observation to obtain information from the practitioners in the fish farm industry (Beh Tai Fishery Trading).*

## Keywords

*Middleman, Fish industry, Supply Chain.*

## 1.0 INTRODUCTION

This paper studies the supply chain management practices in the Malaysian fish farm industry. In fish farm industry there is a situation which exist, where the middleman play an important role in assisting the fish farm company to earn a lot of profit or not. The objective of study is to identify the framework of supply chain in Beh Tai fishery and identify perspective of each middleman in that company.

## 2.0 LITERATURE REVIEW

### 2.1 Agriculture and Agribusiness

What is the meaning of agriculture and agribusiness? According to Lee (1976) the agriculture is an activity that involved in producing plants and animals, and they will sell to consumer. In agribusiness, it defined as the business and manufacturing activities involved in supplying the need of input for farming and marketing the products grown on the farms. It also includes all of the goods and services that are required to produce and supply farm outputs, and get them to the consumer.

Agriculture is the foundation of a country's economy especially in Malaysia. The government in Malaysia takes a serious view in this phenomenon. According to Abdul Rahman (2011) the total of RM3.8 billion is due to the agriculture sector in Malaysian Budget 2012. Although the services sector in Malaysia is now taking over the manufacturing sector become a contributor to economic growth, agriculture still plays the importance role because it can increase the income of farmers, fisherman, and agro-based industries and to make sure the nation's food supply is enough.

### 2.2 Fish Farming

In Malaysia, Fisheries is one of the main contributors in GDP for agriculture. The GDP for fisheries is increase to 18.0 per cent in year 2010 compared with 16.1 per cent in year 2006, according to Abdul Rahman (2011) as shown in Table 1. In Malaysia there are two types of fish farming supply, one consists of the fish is living in saltwater and another supply is the freshwater fishes. The consumption of freshwater fish is increase as we can see in Table 2 below. The common species of fish consumption are catfish, tilapia, and basa. Fish products are mostly categorized as convenience food. The convenience foods are getting popularity in Malaysia consumer. World total demand for fish and fishery products is projected as 20million tonnes to 183 million tonnes in 2015, as indicated by Vanuccinni (2005).

## Percentage share of GDP for agriculture sector, Malaysia, 2006-2010

Kind of economic activity	2006	2007	2008	2009	2010
Oil Palm	30.5	30.1	32.3	31.8	30.1
Forestry and logging	22.1	21.9	19.8	18.6	17.6
Fisheries	16.1	16.2	16.4	17.4	18.0
Mariane Fisheries	11.6	11.6	10.6	10.9	11.3
Aquaculture	4.5	4.6	5.8	6.5	6.7
Other Agriculture	15.1	15.5	15.8	17.0	18.0

*Table 1: GDP for Malaysian agriculture sector 2006-2010 (Department of Statistics Malaysia 2011)*

Year	Quantity (tones)	Value (RM)
2003	49,946.61	332,027.78
2004	55,556.60	255,082.76
2005	62,006.61	293,296.53
2006	61,652.48	292,337.04
2007	70,064.27	344,620.54

*Table 2: production fresh water fish in Malaysia (DOF 2006, 2008)*

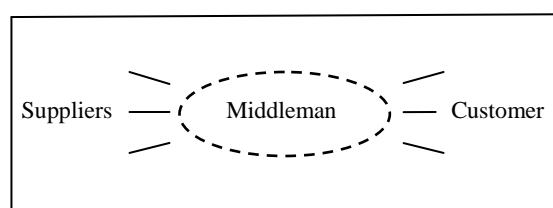
## 2.3 Supply Chain of Fish Farm

In literature review, there are many definitions about Supply Chain Management (SCM). According to Christopher (1992), the supply chain is the network of organizations that is involved, through the linkages of upstream and downstream, in the different processes and activities that produce value of products and service in the hand of the end user. This statement shows that in a complete supply chain there are linkages between upstream and downstream. In fish farm industry the upstream section refers to comprised of fishes in the sea that have not yet been captured. On the other hand, the downstream is based on the fish that are already captured by fisherman and there is a margin applied before they sell it to end user. Another definition of SCM, according to Ellram and Cooper (1993) an integrating philosophy to manage the total flow of a distribution channel from supplier to ultimate customer. In fish farm industry, the flow of a distribution channel form supplier to ultimate customer is based on the middleman. The middleman play a significant role in the fish farm industry, the middleman will buy the fishes form the fish farm industry and then they will their margin in the cost before selling to the consumers. According to Kotler (1988) middleman is the 'link between a society's material requirements and its economic patterns of response'.

## 2.4 The Role of Middleman

### 2.4.1 The Middleman as a Trader

The figure illustrates shows that middlemen offer to their customers an assortment. A combination, of products (adding value) acquired from various sources. The assortment offered to the customers by the middleman is different from what can be offered by each of the firms supplying the middleman. The middleman offers an own product or service which in the different suppliers. The middleman also is a business that like any other business is depends on developing and maintaining relationships with customers and suppliers for which it competes with others.



*Figure 1: The middleman as trader*

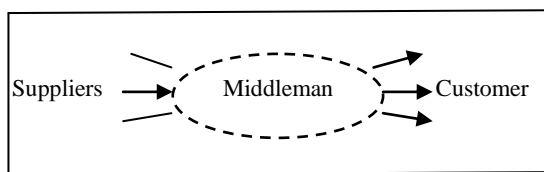
The middleman trader's drills the essential entrepreneurial functions of exploring and creating market exchange opportunities and take the risk entailed in this task. It operates in two markets that are helping the customers access resources needed and the holders of resources to reach the users. The middleman has an important function in the economy of the gap bridging activities in the market network. By creating a different bundle of resource elements offered to customers the middleman takes on the function to "save money" on costs and closer up the supplier and customer gap, i.e. lowering the costs of transactions.

The middleman as trader played an important role in a historical perspective. According to Chandler (1977) a type of trader was the dominant market actor in the pre-industrial society. This kind of middleman bought and sold all types of products and carried out all the basic commercial functions. He was an exporter, wholesaler, importer, retailer, ship-owner, banker, and insurer.

Even if some of the activities of this middleman involve small resource of transformation, such as packaging, sorting and so on, the distinctive trait of the business of the middleman as dealer is that it does not transform resources physically. Middlemen do not carry out the production function, trading is the core activity in this role of the middleman.

### 2.4.2 The Middleman as a Distributor

Large-scale production of this type typically causes two problems for manufacturers. First, production at large-scale involve speculation it is because manufacturing must be started before customers have ordered and bought. Second, the manufacturer faces the problem of reaching many users in such a way that the cost benefits of mass production are not offset by the costs of transfer and transaction. Middlemen can be helpful to manufacturers in solving both these problems. They can share the entrepreneurial risk and they can save on the transaction and transfer costs. These conditions provide the opportunities for a new role of middlemen.



*Figure 2: The middleman as distributor*

The middleman as distributor represents the dominating view on intermediaries in the marketing literature, which takes a manufacturer's perspective. Middlemen are perceived as 'business firms that help the company find customers or close sales with them' (Kotler 1988). Furthermore they hold inventories and 'push' the products, which are critical marketing activities when speculation rules. The distributor role maintains the basic characteristic of the middleman as trader but the change in emphasis. The inputs are to large extent given, identified and provide through the manufacturer.

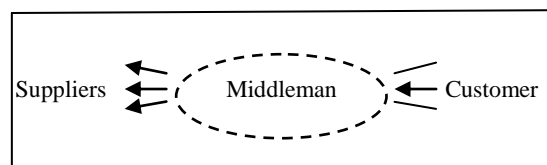
The figure illustrating the role of the middleman as distributor is to some extreme levels as it reflects the perspective of one manufacturer. Most distributors represent more than one manufacturer. The middleman is dependent on individual manufacturers for developing exchange relationships with customers, but many of the middlemen as distributors continue to fulfill the range of function and serve several, more or less differentiated manufacturers.

However, in each manufacturer's perspective they are part of its channel. The middleman as distributor has been *the* view of the role of an intermediary for long time. However, dynamics of the market place reshape business opportunities for the actors involved. The user sides have turned towards increasing differentiation. As users become more familiar with the products or services offered they

tend to require customized solutions rather than standardized. This development has been reinforced by supplier ambitions to differentiate from competitors. Continuous entrepreneurial innovation of the product offering is inherent in the marketing process (Kirzner 1973). This in turn requires closeness and proximity to users and – in particular – the operations of the users. The middleman distributor who interacts directly with users stands in many cases better chance than the manufacturer to conceive a 'superior offering' in the eyes of the user. This explains why many distributors have developed the third of the middleman roles.

### 2.4.3 The Middleman as a Provider

Middlemen distributors are in good point to make the closeness to users. Therefore, many of these have gone through another shift in the middleman's role in the business network, and it can observe a change in the allocation of business functions among the actors involved in gap bridging. The focus of many middlemen's business becomes the identification opportunities based on the customer conception of suitable resource bundles and then searching for suitable sources of these resources. This logic of the middleman's business is derived from a customer perspective. In this view the middleman is part of the user's supply network, more than a manufacturer's channel. Using the terms of Bucklin (1965) speculation is replaced by postponement as the main business logic for the middleman and the whole network. The 'supply chain perspective' mirrors the changes in the allocation of the business functions in the overall net of market relationships.



*Figure 3: The middleman as a Provider*

The recent concern with supply chain management both in practice and in theory shows that the coming out of the middleman as provider is not a subsidiary fact and concerns numerous middleman businesses. In fact the supply chain management perspective is not applicable only to the user manufacturer but to user court. It is interesting to note that this perspective of middlemen is not at all new it has only been more or less hidden by the dominant paradigm of middleman as distributor. In 1960 it was argued that 'the middleman is not a hired link in a chain forged by a manufacturer, but rather an independent market, the focus of a large group of customers for whom he buys' McVey (1960).

### 3.0 METHODOLOGY

This section explains the methods applied in collecting data and information needed to support this paper. Usually, the aim of this paper is to prove that the hypothesis is accurate, and the survey facilitated by the use of a structured questionnaire. According to Anderson and Narus (1998) using this method is appropriate for value evaluation and assessment studies.

#### 3.1 Data Source

In this research there are two main types of data that is primary data and secondary data (Sekaran and Bougie, 2010). The primary data means that first-hand of direct evidence concerning a topic under investigation. They are created by witnesses or recorders who experienced the events or conditions being documented. Primary sources also are characterized by their content, regardless of whether they are available in original format, in microfilm/microfiche, in digital format, or in published format. In secondary data the information will gather from sources that already exist, such as government publication, media, website, industry analysis and so on.

The data source that we use is primary data. Primary data must be generated through the research process as part of the project. Qualitative research can also be called as interpretive research as its primary objective is not generalization but to provide deep interpretation of the phenomena (Cooper and Schindler, 2006). It also used in many academic disciplines such as social sciences (Denzin and Lincoln, 2005) particularly where the objective is to search in human behaviors and personalities.

#### 3.2 Research Design

Research design is a structure or guideline to use for planning, implementation and analysis of the study. When we identify a subject we have to investigate, and organized the result to present our finding. So it is very important to understand our main subject that we want to do the research. According to Wolf (1990), to make a research design we had do the following step:

1. Define research objective. Decide very specifically the questions that need to be answered.
2. Doing preliminary research. Collect any information that helps to define the objective more clearly, including excising statistics on the industry.
3. Design the formal research. Developing the data collection such as questionnaire or interview protocols.
4. Collect the data, and make sure that the procedure is as free bias

5. Lastly analyze the data.

In another hand, research designs are classified to quantitative and qualitative. In this research paper we are going to be use qualitative research method to collect the data that we want. Qualitative data is a data in form of descriptive accounts of observation of data which is classified by type (Ghosh and Chopra, 2003). By using this qualitative data our collection of data is more detail and it can answer the objective of this paper. Primary data such as phone interview will be conducted in Beh Tai Fishery Trading. The owner of the company has been interviewed and the questions are based on the background of the company, species of fish, and middleman perspective.

#### 3.3 Data Collection Method

##### 3.3.1 Interview

Interview are a main technique for collecting data through questioning and are acknowledged as being some of the most effective ways of collecting data in social sciences (Healey and Rawlinson, 1994). In this study, interviews are used to ask about the history of fish farmers after that is perspective of middleman. Based on this interview the respondents will describe their experiences of how the whole supply chain is running (from catching fishes to selling fish to customer). This enables a better understanding of SCM in the fish farm industries.

##### 3.3.2 Observation

Observation method it is not suitable to be used in this study, because the workers in the fish farm mostly are foreign worker and they only know the basic thing in their work. Furthermore, the workers just know how to do their daily work and they don't know how to elaborate their work by speaking English. Therefore the observation method was not applied in this study.

### 4.0 FINDINGS

This section describes the about the outcome that obtained from the interview section related to Beh Tai Fishery Trading located in Mukim 11, Nibong Tebal, Pulau Pinang. The information collected actually is based on the interview session with Mr. Lim Beh Tai, the owner of the company and also the owner for the fish farm land. The business was established in year 1995, which is 18 years ago from now. There are around 30 staffs under Mr. Lim's control. Besides that, the company background also been reviewed. After that, the implementation of the perspective of middleman in their company has been identified to fulfill the paper's objectives.

#### 4.1 Company Background

The Beh Tai Fishery had started their business in year 1995 by producing catfish fingerling. This company located at Tasik Gelugor Penang and has a rented 4 acre land to producing catfish. In year 2000 Beh Tai Fishery has expend their company and started to trade the adult local catfish export to Thailand day by day. Year 2002 the Beh Tai Fishery has diversified into trading the fresh water fish and prawns to Hong Kong and China. The company currently has around 30 workers to work at that company and expand from 4 acres land to 6 acres land. This company has operated for 18 years beginning from year 1995.

Form the begining the company just producing freshwater fish (catfish only) and now the company can produce many of fish such as basa fish, tilapia fish, catfish and prawn. The company normally can produce; 3 to 5 million catfish fingerings per month, 1 million of puyu fingerlings per month, the tilapia fingerlings can produce up to 0.5 million to 2 million, and lastly the fresh water prawns fingerling can be produced 3 to 4 million per month.

#### 4.3 Middleman Perspective

The Beh Tai Fishery at the beginning year of 1995 just had a small business and normally did their sales directly to the consumer. By doing it this way, it was noted that the rotation of their product life cycle is very slow and not much fish that can sold. Some of the reason is the company is still new and not much people know about this company. In early 1998 Beh Tai Fishery Company started to deal with about 5 middlemen to help Beh Tai Fishery Company in distributing their catfish in around of Penang state. Most of the middleman is retailer that selling the fish at market in Penang.

In year 1999 Beh Tai Fishery Company had made a decision to expand their company slowly with finding the big middleman to help the company to distribute their fish. In year 2000 Beh Tai Company started to deal with middleman in Thailand by trading the adult local catfish. The company also started to feed several of fresh water fish and Prawns. The middleman at Thailand is wholesalers after the local catfish reach at Thailand, middleman will distribute out the cat fish to small retailer and after that the retailer will sell that catfish to consumer. in year 2002 Bah Tai Fishery Company once again to expand their business to Hong Kong and China they find the wholesaler middleman that willing to accept their contract to distribute out the fish. In Hong Kong and China Wholesaler middleman willing to buy their fresh water fish and prawns at low price.

#### 4.4 Framework of Supply Chain

Supply chain management requires a common understanding of supply chain objectives and individual roles, an ability to work together, and a willingness to adapt in order to create and deliver the best products possible. From the beginning Beh Tai Fishery Company has to find the right middleman to distribute catfish to customer. The Penang retailer will help Beh Tai Fishery Company to distribute out their fish in around of Nibong Tebal area and normally the retailer will sell their fish in market Nibong Tebal. However the middleman come from Thailand will buy their fresh water fish base on the demand of Thailand after buying the fish they will put all the fish into ice box and then filling full of ice to maintain freshest. After that, they will transfer the fish by truck around two and half hour the truck will reach their wholesalers and then the retailer of Thailand will take the fish and to sell it to their country. The same thing goes to middleman at Hong Kong and China, from the beginning the middleman will list down the order to Beh Tai Fishery Company next, the worker will help to pick the order and pack it in ice container and distribute by air shipment.

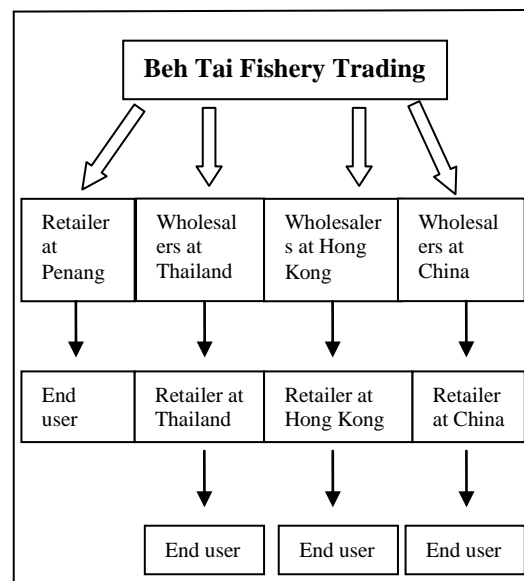


Figure 4: framework of supply chain in Beh Tai fishery trading

#### 5.0 DISCUSSION & CONCLUION

Regarding to research findings, Barabino *et al.* (2012) proved the theoretical frameworks of research were applicable in developing on supply chain management. Those variables such as understanding the supply chain in fish farm industry identify key factor of supply chain (middleman) and

investigate the framework of downstream of fish farm industry. By doing primary data that is collecting data form owner of Beh Tai Fishery Trading it was the most effective evident to explain the components of supply chain management. In conclusion, using primary data is as useful tool in understanding the supply chain management.

## Supply Chain Management in the Aquaculture Industry: The Case of Food Fish .

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